



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#3A
12-21-01
Robert
Ami

In re Application of:

John Joseph Konrad et al.

Serial No.: 09/804,921

Art Unit: 2811

Filed: March 13, 2001

Examiner: To be assigned

For: STRUCTURE HAVING
LASER ABLATED
FEATURES AND METHOD
OF FABRICATING

Atty Docket: END920000077US1

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to initial examination, please amend the above-captioned case as follows.

IN THE SPECIFICATION:

Please amend the specification as follows:

Page 1, last paragraph (continues onto page 2):

Great difficulties exist in adequately etching dendrites especially when dealing with small spaces. Moreover, along with the concern created by dendrites, the width of the lines (e.g. about 0.5 mils wide), and photolithographic issues (e.g. resolution of fine features, 0.7 mil wire with 1.1 mil space, in a thin photo resist film), and subtractive etch undercut and pad rounding, render clearly and fully resolving small line spaces such as the 1.8 mil pitch features presently desired very difficult. Additionally, this subtractive

etch approach results in unprotected circuitry features referred to as "skyscrapers" that extend above an underlying plane of dielectric barrier material.

Page 6, third paragraph:

A conductive thin film 5 such as copper is then plated onto the seed layer. See Figure 1d. The conductive film 5 is coplanar with the remaining polymer resin and is typically up to about 20 microns, more typically about 5 to about 20 microns and preferably about 5 to about 10 microns. The conductive film can be deposited by electroless plating, or electroplating that is well known in the art. The preferred method of depositing the conductive film is by electroless plating.

Page 6, 7th paragraph:

The conductive metal is preferably copper or chromium and most preferably copper. The conductive metal is typically in the form of a powder or as a particulate. The conductive metal typically has a particle size of about 10 to about 50 microns and more typically about 15 to about 20 microns.

IN THE ABSTRACT (page 13)

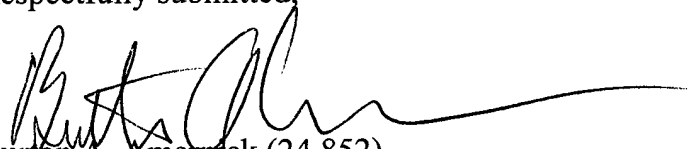
Please amend the abstract as follows.

Embedded flush circuitry features are fabricated by providing a conductive seed layer on the sidewalls and bottom of laser ablated trench features plating a layer of conductive metal onto the seed layer and depositing a layer of dielectric material.

REMARKS

The specification and abstract have been amended to correct clerical errors. None of these amendments is believed to involve any new matter. Accordingly, it is respectfully requested that the foregoing amendments be entered, that the application as so amended receive an examination on the merits, and that the claims as now presented receive an early allowance.

Respectfully submitted,



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